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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,890	03/09/2004	Kunio Nakayama	791_235	2913
25191	7590	10/13/2004	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			SPITZER, ROBERT H	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/796,890	<b>Applicant(s)</b> NAKAYAMA ET AL.	
	<b>Examiner</b> Robert H. Spitzer	<b>Art Unit</b> 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 5-9 is/are allowed.
- 6) ☒ Claim(s) 3,4 and 10-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/9/04 &amp; 5/13/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. Claims 1,2 and 5-9 are allowed.
2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 3,4,25-27 and 30-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is indefinite because there is no direct antecedent basis for the recitation of "said silica sol solution containing silica". Claim 4 is indefinite because it recites "hydrothermal synthesis" without any correlation to the identical recitation in claim 1. Claim 25 is indefinite because it recites "a mixed gas containing carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>)" without any correlation to "a mixed gas containing at least two types of gas components" already recited in claim 24. Claim 26 is indefinite because in line 5, there is no direct antecedent basis for the recitation of "said at least one type of gas component". Claim 27 is indefinite because it depends from indefinite claim 26. Claim 30 is indefinite because it recites "a mean pore diameter" without any correlation to the identical recitation in claim 28. Claim 31 is indefinite because in line 5, there is no direct antecedent basis for the recitation of "said obtained raw material solution". Claims 32-36 are indefinite because they depend from indefinite claim 31.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 10-24 and 26-30 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by the DDR zeolite membrane of Olson (6,488,741), wherein in Examples 9,9A and 10 is shown a DDR (ZSM-58) zeolite membrane which is formed on an inorganic substrate and is used to separate gas components from each other. The gas permeance values of the dependent claims do not change the DDR membrane structure and are thus given no patentable weight with respect to these membrane article and apparatus claims.
6. Claims 3,4 and 31-36 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
7. Claim 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
8. The remaining references listed on the PTO-892 and those cited on the PTO-1449 show art of interest.
9. Applicants' response to this Office action must also include the following editorial changes: on Fig. 3, a description must be provided for numbers 106,111 and 112; page 3, line 7, "power" should be "powder"; page 5, line 15, "be" should be inserted after "effectively"; page 14, line 12, "lease" should be "least", and in

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line 16, "from" should be inserted after "different"; page 15, line 24, "the a" should be either "the" or "a"; page 17, line 6, "has" should be either "having" or "that has"; page 29, line 17, "likely" should be "like"; page 34, line 21, "at" should be inserted before "least", and in line 22, "selected from selected from" should be "selected from"; page 41, line 6, "is" should be "are"; page 43, line 11, "at" should be inserted before "least"; page 63, lines 16 and 22, "Tables" should be "Table", and in line 26, "depends" should be "depend"; page 64, line 3, "Tables" should be "Table"; page 70, line 25, "of" should be canceled; page 73, line 5, "membranes" should be "membrane"; page 76, line 17, "embodiments" should be "embodiment"; and on page 77, line 1, "separation factor" should be deleted as the same expression appears on the last line of page 76.

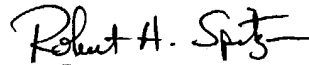
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H. Spitzer whose telephone number is (571) 272-1167. The examiner can normally be reached on Monday-Thursday from (5:30AM-4:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 12, 2004

  
Robert H. Spitzer  
Primary Examiner  
Art Unit 1724

October 12, 2004